

WHAT IS CLAIMED IS:

1. An ethylene-propylene polymer blend having a number average molecular weight within the range of about 20,000 to about 300,000 and a molecular weight distribution within the range of about 1.3 to about 5 prepared by the process comprising blending or simultaneously blending and shearing:

(a) an essentially amorphous low ethylene content ethylene-propylene polymer containing an ethylene to propylene mole ratio within the range of 35/65 to 65/35, having a number average molecular weight within the range of about 40,000 to about 300,000 and a molecular weight distribution within the range of about 1.3 to about 5.0; and

(b) a partially crystalline higher ethylene content ethylene-propylene polymer containing an ethylene to propylene molar ratio within the range of about 65/35 to about 85/15, having 3-25 weight percent crystallinity, and, having a number average molecular weight within the range of about 40,000 to about 300,000 and a molecular weight distribution within the range of about 1.3 to about 5.0;

whereby the blending, or simultaneous blending and shearing, is carried out under conditions of heat and mechanical work sufficient to create high shear conditions for a time sufficient to reduce the molecular weight and molecular weight distribution of the blend of (a) and (b), wherein the weight ratio of the low ethylene content ethylene-propylene polymer (a) to the higher ethylene content ethylene-propylene polymer (b) is within the range of about 45/55 to about 10/90.

2. The polymer blend of claim 1, wherein the total mol % of ethylene in the polymer blend is from about 65 to about 80 having 3-15 weight percent crystallinity.

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3. The polymer blend of claim 1, wherein the essentially amorphous low ethylene content ethylene-propylene polymer of (a) has a ratio of ethylene to propylene of 60 mol% ethylene to 40 mol% propylene.

5 4. The polymer blend of claim 1, wherein the partially crystalline higher ethylene content ethylene-propylene polymer of (b) has a ratio of ethylene to propylene of about 82 mol% ethylene to about 18 mol% propylene.

5. A lubricating oil composition comprising a major amount of oil of a
10 lubricating viscosity, a performance additive package appropriate for the quality and performance levels, a pour point depressant, and a viscosity index improving amount of an oil soluble polymer mixture comprising: an ethylene-propylene polymer blend having a number average molecular weight within the range of about 20,000 to about 300,000 and a molecular weight distribution within the range of about 1.3 to about 5 prepared by the
15 process comprising blending or simultaneously blending and shearing:

(a) an essentially amorphous low ethylene content ethylene-propylene polymer containing an ethylene to propylene mole ratio within the range of 35/65 to 65/35, having a number average molecular weight within the range of about 40,000 to about 300,000 and a molecular weight distribution within the range of about 1.3 to about 5.0; and

20 (b) a partially crystalline higher ethylene content ethylene-propylene polymer containing an ethylene to propylene molar ratio within the range of about 65/35 to about 85/15, having 3-25 weight percent crystallinity, and, having a number average molecular weight within the range of about 40,000 to about 300,000 and a molecular weight distribution within the range of about 1.3 to about 5.0;

whereby the blending, or simultaneous blending and shearing, is carried out under conditions of heat and mechanical work sufficient to create high shear conditions for a time sufficient to reduce the molecular weight and molecular weight distribution of the blend of (a) and (b), wherein the weight ratio of the low ethylene content ethylene-propylene polymer (a) to the higher ethylene content ethylene-propylene polymer (b) is within the range of about 45/55 to about 10/90.

6. An automotive engine lubricated with the lubricating oil composition of claim 5.

7. A method of improving the viscosity index of a lubricating oil, comprising adding to an oil of lubricating viscosity a viscosity index-improving amount of a polymer blend of claim 1.